

Cropland Management Plan
Camas National Wildlife Refuge
Hamer, Idaho

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CROPLAND MANAGEMENT PLAN

I. Introduction (Affected Environment)

A. Enabling legislation for refuge

The refuge was established on 17 October, 1937 under Executive Order 7720 dated 8 October, 1937.

B. Purpose(s) of refuge

The purpose for which the refuge was established was ". . . as a refuge and breeding ground for migratory birds and other wildlife." (Executive Order 7720).

C. Current habitats and associated wildlife use for the refuge

Camas National Wildlife Refuge is located in Jefferson County, Idaho, about 35 miles north of Idaho Falls. Camas National Wildlife Refuge is 1 of 4 refuges in the Southeast Idaho Refuge Complex, administered from Pocatello, Idaho. The Refuge is about 4800 ft elevation. The northern portion of the Snake River Plain where the Refuge is located is partially surrounded by mountains. The Centennial and Beaverhead Ranges to the north, the Lemhi and Lost River Ranges to the west. Water for the Refuge comes from Camas Creek which flows from the Centennial Mountains and from wells. The Refuge is underlain by the northern portion of the Snake River Aquifer. The Aquifer is under heavy demand for irrigation water.

Camas National Wildlife Refuge contains 10,578 acres of land. Of these about 3,600 acres are sandy upland sites, 3,000 acres are wet meadow, 900 acres are saline wet meadow, and 3,200 acres are marsh. Potential areas that could be hayed are the wet meadow habitat types. Actual acreage that could be hayed is much lower, because some of these habitat types are too wet or too brushy to hay, or are on islands. About 70 acres are planted to grain and 70 acres to alfalfa for feeding areas for geese and cranes. The alfalfa field is also hayed.

The climate is dry (< 9 inches of precipitation per year; 25% of which falls in May and June). with mild summers (temperature rarely > 90° F) and cold winters (temperatures often reaching -40° F).

Bald eagles are present from fall through spring. Peregrines nest on a hack tower on the west side of the Refuge. Ducks, Canada geese, and cranes are

the major species for which management occurs. One pair of trumpeter swans nests on the Refuge. There are 2 colonial bird nest areas at Camas National Wildlife Refuge, at Ray's Lake and at Center Pond. These contain white-faced ibis, western grebe, black tern, Forster's tern, great blue heron, snowy egret, great egret, cattle egret, Franklin's gull, and black-crowned night-heron. Long-billed curlews nest in the upland areas. Mule deer, white-tailed deer, moose, and pronghorn occur on the Refuge.

No special designation lands (wilderness areas, National Historic Landmarks, critical habitat, etc.) occur on Camas National Wildlife Refuge.

Mud Lake and Market Lake Wildlife Management Areas, both managed by the Idaho Department of Fish and Game, occur nearby. Lands surrounding Camas National Wildlife Refuge are primarily agricultural lands (potatoes, alfalfa, and small grains) with BLM rangeland west of the refuge. Noxious weeds, especially Russian knapweed and Canada thistle, are major problems in the area; leafy spurge is also becoming more of a problem.

A more complete description of the refuge is found in Part I of the refuge management plan (see Appendix G).

II. Purpose and Need for Cropland Management

A. Refuge objectives

Refuge objectives that relate to cropland management include production of Canada geese, sandhill cranes and waterfowl; maintenance of Canada geese, sandhill cranes and waterfowl; wildlife observation; and photography. A complete description of refuge objectives and why objective level deficits occur is found in Part II of the refuge management plan (see Appendix H).

B. Justification for farming program

Production and maintenance objectives for Canada geese, sandhill cranes and waterfowl are partially met by the cropland program. The alfalfa and improved grass meadows are characterized by short cover which provide foraging and loafing areas for geese and cranes. The short cover allows geese and cranes to detect approaching predators at a safe distance. The short grass and forb cover puts out new shoots which are high in protein and are preferred food of Canada geese while the cereal grain are high in carbohydrates which meet the high energy demands of waterfowl, particularly during migration. Appendix I contains a copy of a leaflet from the Waterfowl Management Handbook titled "Managing Agricultural Foods for Waterfowl" by James K. Ringelman which further describes the benefits

of agricultural crops to waterfowl.

The Refuge cropland provides a consistent feeding area from year to year within the Refuge that helps to build flock fidelity to the area which in turn leads to increased use of available nesting habitat on the Refuge. The cropland allows the birds to feed undisturbed which reduces metabolic energy consumption which helps ensure better body condition for the nesting/breeding season both on the Refuge and on breeding grounds further north. The cereal grains also provide the high energy food needed for the southward migration and to ensure good body condition on wintering areas.

The cropland provides an excellent area for viewing and photographing concentrations of waterfowl and other wildlife such as mule deer and white-tailed deer. The use of the cropland by wildlife is also observed by local farmers and ranchers who believe that wildlife cause them an economic loss and believe that a refuge should provide this type of supplemental food to relieve pressure on the private lands. This is a way of ensuring customer satisfaction to a broader range of refuge visitors and neighbors.

III. Proposed Action and Alternatives

A. Alternatives

1. No Action (No cropland management)

This alternative would propose to have no farming of ground to produce cereal grains or alfalfa. No haying would be permitted to harvest alfalfa or tame grass hay.

2. Biological Farming

This alternative would propose to farm 120 acres to produce cereal grain and alfalfa. No chemicals would be used in the farming program but mechanical fallowing would be used on 40 acres annually to control weeds. Haying would further control weeds in alfalfa.

To keep the farmed acreage to a minimum the cereal grain farming would be done force account. No extra ground would have to be in production to compensate for any share harvested under a cooperative farming agreement. The production and harvesting of alfalfa hay would be under competitive bid to ensure that the cost of production and harvesting are borne by the successful bidder.

3. Conventional Farming (Current Program)

This alternative would propose to farm 120 acres to produce cereal grain and alfalfa. Herbicides would be used to control broad-leaf weeds in the cereal grain. A broad-spectrum herbicide such as glyphosate may be used to eliminate all vegetation before rotating out of alfalfa - which is typically heavily invaded with grasses - and into cereal grain. Mechanical fallowing would be used on 40 acres to further control weed competition and haying would control weeds in alfalfa.

To keep the farmed acreage to a minimum the cereal grain farming would be done force account. No extra ground would have to be in production to compensate for any share harvested under a cooperative farming agreement. The production and harvesting of alfalfa hay would be under competitive bid to ensure that the cost of production and harvesting are borne by the successful bidder.

B. Proposed Cropland Management Program

1. Farmed acres/Crop-sharing ratios

Cereal Grain - Forty acres would be in grain. None would be harvested - all would be left for use by migratory birds and other wildlife.

Fallow Ground - Forty acres would be fallowed annually.

Alfalfa - Forty acres would be harvested annually under a bid system. The successful bidder would be permitted to harvest two cuttings and the third crop would be left standing for migratory birds and other wildlife.

2. Crop rotation

Cereal grain and fallow ground would be rotated every year. Alfalfa would be rotated into fallow ground every 6 to 8 years and grain into the old alfalfa ground. A bid system would be used to permit a successful bidder to plant and harvest the new alfalfa and nurse crop.

3. Tenure arrangements

No cooperative or contract farming agreements are in effect. One permittee is issued an annual haying permit for alfalfa under a negotiated sale basis as allowed and described in various sections of the Refuge Manual. Although this is an annual permit, the rancher has

come to expect that the permit will be renewed each year. Although negotiated sales are, at times, the best method to harvest hay on small tracts of hay, the permittee harvesting the alfalfa hay has been notified that the alfalfa will be put out for bid beginning in 1996.

4. Pesticides

Camas does not have an approved IPM plan. The refuge does, however, use IPM methods under approved Pesticide Use Proposals; refuge staff use a combination of techniques for pest plant control including mowing, haying, digging, pulling, burning, biological control, and pesticides. An IPM plan will be prepared prior to the 1996 pest control season.

5. Biological farming

Biological farming is recognized as a desirable alternative to conventional farming but is not used in all aspects of the refuge farming program. Biological techniques that are used include the banning of any insecticide use; only periodic use of inorganic nitrogen fertilizers; mechanical fallowing to reduce the need for chemical control of wild oats and other competitive weeds; and the use of grain/alfalfa/fallow rotations. We continue to use herbicides to control weed competition in grain fields to maximize production and reduce the amount of ground that is farmed.

6. Fertilizer

Camas refuge does not propose to use organic fertilizers. The refuge periodically uses synthetic fertilizers to increase the available nitrogen and phosphorus needed for cereal grain production. Budget constraints sometimes require a reduction or elimination of the purchase of fertilizer.

7. Disposition of excess crops

No excess crops would be produced. Revenue from sale of alfalfa hay is remitted to the federal government.

8. Monitoring

Wildlife use of farmed units is monitored throughout the year. Within budget constraints, soil fertility is tested periodically and fields are walked through to determine pesticide efficacy. No grain is harvested

and no hay is shared with the refuge so no inventory control of stored hay or grain is required.

IV. Environmental Effects

A. Effects of Proposed Action and Alternatives.

1. No Action

One hundred and twenty acres that has been planted to cereal grain, alfalfa, and fallowed would need to be planted to a permanent grass cover.

Goose and crane production would decline.

Geese and cranes would have less short cover for feeding and loafing and would be more susceptible to predators.

Crane use of the Refuge for feeding and loafing may be reduced and expose them to increased human related dangers, such as powerlines and illegal shooting.

Birds would not have feeding areas in which to feed undisturbed which would increase metabolic energy consumption which would reduce body condition for the nesting/breeding season both on the Refuge and on breeding grounds further north. The cereal grains would not provide the high energy food needed for the southward migration and to ensure good body condition on the wintering areas.

No chemical herbicides and fertilizers would be used to raise the crops.

2. Biological Farming

One hundred and twenty acres of cereal grain, alfalfa, and fallow ground would be maintained in a cropland rotation. This ground would not be available for nest sites for ground nesting birds.

Short cover for feeding and loafing would be provided for geese and cranes; they could detect approaching predators at a safe distance.

Young shoots would be available for grazing geese.

Production would increase because of fidelity to the area due to the available food resources and reduced predation.

Birds would feed undisturbed which would reduce metabolic energy consumption which would help ensure better body condition for the nesting/breeding season both on the Refuge and on breeding grounds further north. The cereal grains would also provide the high energy food needed for the southward migration and to ensure good body condition on the wintering areas.

No chemical herbicides and fertilizers would be used to raise the crops.

3. Conventional Farming (Current Program)

One hundred and twenty acres of cereal grain, alfalfa, and fallow ground is maintained in a cropland rotation. This ground is not available for nest sites for ground nesting birds.

Short cover for feeding and loafing would be provided for geese and cranes; they could detect approaching predators at a safe distance.

Young shoots would be available for grazing geese.

Production is increased because of fidelity to the area due to the available food resources and reduced predation.

Birds feed undisturbed which reduces metabolic energy consumption which helps ensure better body condition for the nesting/breeding season both on the Refuge and on breeding grounds further north. The cereal grains also provide the high energy food needed for the southward migration and to ensure good body condition on the wintering areas.

Chemical herbicides and fertilizers would be used to raise high quality crops.

B. Costs and drawbacks of alternatives

1. No Action

The cost of this alternative would require a onetime cost of \$8,000 plus an average of \$500 per year annual maintenance cost. The \$8,000 is the cost to replant 120 acres to grass and forb cover - this

includes the cost for seed, fertilizer, fuel, labor, and electricity to irrigate the new planting.

The new planting would likely require non-native plants in the seed mix and it is doubtful that the 120 acres would ever be restored to a native plant community. The elimination of grain and alfalfa production would lead to less crane and goose use of the refuge and a probable decline in nesting. Cranes that roost and loaf on the refuge during the day would feed on private fields mornings and evenings which would expose them to increased human-related dangers, such as powerlines and illegal shooting. Depredation complaints for geese and cranes would increase while wildlife viewing opportunities would decrease.

2. Biological Farming

The annual cost of this alternative would be \$3,800 for seed, fuel, and labor to irrigate 40 acres of grain and 40 acres of alfalfa and to fallow 40 acres. The cost of electricity to irrigate the crops would be borne by the successful bidder for the haying privileges. There would be no cost for fertilizer or herbicide since none would be applied but there would be higher labor cost compared to the current farming program because of the need for more labor and mechanical treatment of weeds.

There would be an increase in weed competition which would reduce the grain crop yield and reduce the number of bird use days that the crop could support. The reduced bird use days may shift to private land and increase depredation complaints. The increase in weeds may increase noxious weed complaints.

3. Current Program

The annual cost of this alternative would be \$4,200 for seed, fertilizer, herbicide, fuel, and labor to irrigate 40 acres of grain and 40 acres of alfalfa and to fallow 40 acres. The cost of electricity to irrigate the crops would be borne by the successful bidder for the haying privileges.

The use of herbicides would increase crop yields by reducing weed competition; the increased crop yield would increase bird use days which would keep birds off private land and reduce depredation complaints. Wildlife viewing opportunities would increase. The improper use of chemicals could result in soil and water contamination.

Appendix A. Camas NWR objectives.

Refuge obj	Refuge objective	Output	Current level	Objective level	Deficit (-)/surplus (+)
1	Peregrine falcon production	EA	3	3	0
2	Peregrine falcon and bald eagle maint.	UD	2100	2600	500
3	Trumpeter swan production	EA	3	9	6
4	White-faced ibis production	EA	275	275	0
5	Redhead and canvasback production	EA	825	1450	625
6*	Mallard production	EA	500	1600	1100
7*	Canada goose production	EA	400	400	0
8*	Sandhill crane production	EA	15	30	15
9*	Other duck production	EA	2200	5200	3000
10	Colonial nesting waterbird production	EA	175	175	0
11	Raptor maintenance	UD	33,000	**	**
12*	Shore/marsh/waterbird maintenance	UD	289,000	**	**
13*	Waterfowl maintenance	UD	4,407,000	**	**
14	Migratory bird diversity	SPP	177	177	0
15	Natural environments preserved	AC	10,578	10,578	0
16	Student environmental education	AH	350	350	0
17	Interpretive tour route	AH	0	1,200	1,200
18	Visitor contact station	AH	0	400	400
19	Other interpretive programs	AH	75	75	0
20*	Wildlife/wildlands observation	AH	1500	1500	0
21*	Photography	AH	200	200	0
22	Waterfowl and upland bird hunting	AH	250	4000	3750

* Objectives partially or totally supported by farming activities.

** No numeric objectives have been established.

Appendix B. Crop acreage and types for each refuge objective.

Refuge obj	Percent output supported by farming program	Crop type (name)	Crop objective (acres)	Farmed acres	Refuge share	
					%	acres
6	< 5	Grain	40	40	100	40
7	10	Grain	40	40	100	40
	10	Alfalfa	40	40	33*	40
8	5	Grain	40	40	100	40
9	< 5	Grain	40	40	100	40
12	< 5	Grain	40	40	100	40
13	10	Grain	40	40	100	40
20	5	Grain	40	40	100	40
	5	Alfalfa	40	40	33*	40
21	< 5	Grain	40	40	100	40
	< 5	Alfalfa	40	40	33*	40

*Permittee gets two cuttings of alfalfa; third crop is not harvested.

Appendix C.

Crop rotation schedule(s) for Camas NWR.

The 120 acres of cropland is divided into three contiguous farm fields - one is fallowed, one is in cereal grain (wheat), and one is in alfalfa. The field that is in alfalfa is generally left in alfalfa for six to eight years depending on the vigor of the stand. After the vigor of the stand decreases (the alfalfa dies out and is replaced by quackgrass) the alfalfa stand must be plowed under and planted to grain. The stand is first sprayed with glyphosate to remove most grass and forb competition, plowed, and grain planted. This new stand of grain is then rotated with fallow ground annually to control broadleaf weeds and wild oats. Therefore, 80 acres of cropland is rotated annually with 40 acres being in grain one year, fallowed the next with this cycle repeated for six to eight years until the alfalfa field is due for rotation.

Appendix D.

The effects of the cropland management alternatives in meeting Camas NWR objectives (positive + + +, + +, +; negative ---, --, -; neutral 0).

Refuge obj #	Alternative	Effects of alternative						
		Native Wildlife diversity	Native Habitat diversity	# of Wildlife species	# of plant species	T&E species	Trust resources	Pest Mgmt
6,7,8 9,12,13 20,21	No Action	0	0	-	0	0	-	-
6,7,8 9,12,13 20,21	Biological Farming	0	-	+	-	0	+	+
6,7,8 9,12,13 20,21	Current Program	0	-	+	-	0	++	++

Appendix E.

Annual Service funding requirements to implement each alternative listed in Appendix D for Camas NWR.

Refuge obj #	Alternative	Total Service cost	Major drawback(s)
6,7,8 9,12,13 20,21	No Action	\$8,000*	Reduction in geese and crane production and use; less wildlife viewing opportunities; increased depredations
6,7,8 9,12,13 20,21	Biological Farming	\$3,800	Reduced amount of grain for birds; increased noxious weeds; some increase in depredations
6,7,8 9,12,13 20,21	Current Program	\$4,200	Requires use of agricultural chemicals to maintain high quality crops. Potential for soil and water contamination.

*One time cost of \$7,000 to replant to grasses and forbs. \$500 average annual cost to maintain grass and forb community.

Section I: PURPOSE AND NEED FOR ACTION

A. Why is action being considered? (Discuss problems, opportunities, needs)

The action is being considered to review the effectiveness of the cropland management program in meeting the objectives of Camas National Wildlife Refuge.

Geese and cranes select sites characterized by short cover in which to forage and loaf; Canada geese prefer new shoots of grasses and forbs which are high in protein. Geese, ducks, and cranes need high energy foods to meet the high energy demand of migration to ensure that they arrive on the breeding and wintering areas in good condition.

Migrating birds will establish nesting territories within their historic breeding range that meet all their habitat requirements. The better the habitat conditions that can be provided for birds seeking territories the more likely they are to stay and nest successfully.

The public is very interested in viewing wildlife - some prefer wildlife in totally natural settings while others are thrilled and excited to view and photograph wildlife in all settings. It could be argued that some species of wildlife, such as Canada geese, are so abundant because of the agriculture practices that have helped sustain them on migration and wintering areas so that they can breed so successfully in their historic breeding areas.

Local farmers and ranchers believe that they suffer economic losses because migratory birds and other wildlife feed on surrounding private croplands.

B. How does the action relate to Service objectives?

The action affects Camas National Wildlife Refuge objectives for duck, goose, and crane production and maintenance; wildlife observation; and wildlife photography; and the U. S. Fish and Wildlife Service goals to perpetuate the migratory bird resource; and to provide refuge visitors with high quality, safe, wholesome, and enjoyable recreational experiences oriented to wildlife.

C. What is the action supposed to accomplish?

The action will determine if cropland management is an acceptable and/or desirable alternative to meet refuge objectives while considering the Service policy of using the most natural means, if possible, to meet objectives.

Geese and cranes select sites characterized by short cover in which to forage and

loaf. Alfalfa and improved grass meadows in hay production put out new shoots which are high in protein and are preferred food of Canada geese. Cereal grain provides a food source that helps meet the high energy demands of migrating geese, ducks and cranes. The alfalfa, grass and grain croplands provide secure feeding sites and help build and maintain flock fidelity of Canada geese to the area; increase nesting use and success; and improve the physical condition of breeding and migrating birds. The fields also provide sites where several species of wildlife are easily observed and photographed by refuge visitors while at the same time reducing crop depredations on surrounding private land.

D. Identify issues (if not discussed in 1, 2, or 3).

Additional issues include the use of chemicals, mechanical disturbances, and unnatural conditions.

E. Identify the decision to be made by the responsible official.

To select the proposed Cropland Management Plan or an alternative.

Section II: ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. No Action Alternative

1. Describe this alternative.

This alternative proposes to have no farming of ground to produce cereal grains or alfalfa. No haying would be permitted to harvest alfalfa or tame grass hay.

2. To what extent would this alternative satisfy the problems, opportunities or needs identified in Section I?

This alternative would not provide additional browse and high energy food (grain) for migrating waterfowl and cranes as well as those nesting on the refuge and for resident wildlife. Flock fidelity to the area would not increase and would not increase use of the available breeding and nesting habitat. Crop depredations on private land would not be reduced. The wildlife viewing and photography opportunities would be reduced.

3. What are the principal environmental (biophysical) effects associated with implementation of this alternative?

One hundred and twenty acres that has been planted to cereal grain, alfalfa, and fallowed would need to be planted to a permanent grass cover.

Goose and crane production would decline.

Geese and cranes would have less short cover for feeding and loafing and would be more susceptible to predators.

Crane use of the Refuge for feeding and loafing may be reduced and expose them to increased human related dangers, such as powerlines and illegal shooting.

Birds would not have feeding areas in which to feed undisturbed which would increase metabolic energy consumption which would reduce body condition for the nesting/breeding season both on the Refuge and on breeding grounds further north. The cereal grains would not provide the high energy food needed for the southward migration and to ensure good body condition on the wintering areas.

No chemical herbicides and fertilizers would be used to raise the crops so there would be no drift onto non-target species and no herbicides and fertilizers from refuge operations would contaminate surface and ground water.

4. What are the principal socioeconomic effects associated with implementation of this alternative?

Wildlife viewing and photography opportunities would be reduced. Economic losses to local farmers and ranchers would increase due to wildlife feeding on surrounding private croplands.

5. Would implementation of this alternative likely result in significant controversy? Explain.

No

B. BIOLOGICAL FARMING

1. Describe this alternative.

This alternative proposes to farm 120 acres to produce cereal grain and alfalfa. No chemicals would be used in the farming program but mechanical fallowing would be used on 40 acres annually to control weeds. Haying would further control weeds in alfalfa.

To keep the farmed acreage to a minimum the cereal grain farming would be done force account. No extra ground would have to be in production to compensate for any share harvested under a cooperative farming agreement. The production and harvesting of alfalfa hay would be under competitive bid to ensure that the cost of production and harvesting are borne by the successful bidder.

2. To what extent would this alternative satisfy the problems, opportunities or needs identified in Section I?

This alternative would provide browse and high energy food (grain) for migrating waterfowl and cranes as well as those nesting on the refuge and for resident wildlife. The crops would help build flock fidelity to the area which would increase use of the available breeding and nesting habitat while at the same time help to alleviate crop depredations on private land. The wildlife viewing and photography on these fields is very popular with general refuge visitors and increases the support for refuge programs to benefit wildlife.

3. What are the principal environmental (biophysical) effects associated with implementation of this alternative?

One hundred and twenty acres of farmed and fallowed ground would be unavailable for nest sites for ground nesting birds.

Short cover for feeding and loafing would be provided for geese and cranes; they could detect approaching predators at a safe distance.

Young shoots would be available for grazing geese.

Production of waterfowl and cranes would be increased because of fidelity to the area due to the available food resources and reduced predation. Also, metabolic energy consumption would be less because birds would be disturbed less which helps ensure better body condition for the nesting/breeding season both on the Refuge and on

breeding grounds further north. The cereal grains also provide the high energy food needed for the southward migration and to ensure good body condition on the wintering areas.

No chemical herbicides and fertilizers would be used to raise the crops so there would be no drift onto non-target species and no herbicides and fertilizers from refuge operations would contaminate surface and ground water.

Quality of refuge crops would decline.

Occurrence of noxious weeds would increase.

4. What are the principal socioeconomic effects associated with implementation of this alternative?

Wildlife viewing and photography opportunities of waterfowl and other wildlife, such as mule deer and white-tailed deer would increase. Economic losses to local farmers and ranchers due to wildlife feeding on surrounding private croplands would decrease. This is a way of ensuring customer satisfaction to a broader range of refuge visitors and neighbors.

5. Would implementation of this alternative likely result in significant controversy? Explain.

No.

C. Proposed Cropland Management Plan (Current Program) - Preferred alternative

1. Describe this alternative.

This alternative proposes to farm 120 acres to produce cereal grain and alfalfa. Herbicides would be used to control broad-leaf weeds in the cereal grain. A broad-spectrum herbicide such as glyphosate may be used to eliminate all vegetation before rotating out of alfalfa - which is typically heavily invaded with grasses - and into cereal grain. Mechanical fallowing would be used on 40 acres to further control weed competition and haying would control weeds in alfalfa.

To keep the farmed acreage to a minimum the cereal grain farming would be done force account. No extra ground would have to be in production to compensate for any share harvested under a cooperative farming agreement. The production and harvesting of alfalfa hay would be under competitive bid to ensure that the cost of production and harvesting are borne by the successful bidder.

2. To what extent would this alternative satisfy the problems, opportunities or needs identified in Section I?

This alternative would provide browse and high energy food (grain) for migrating waterfowl and cranes as well as those nesting on the refuge and for resident wildlife. The crops would help build flock fidelity to the area which would increase use of the available breeding and nesting habitat while at the same time help to alleviate crop depredations on private land. The wildlife viewing and photography on these fields is very popular with general refuge visitors and increases the support for refuge programs to benefit wildlife.

3. What are the principal environmental (biophysical) effects associated with implementation of this alternative?

One hundred and twenty acres of farmed and fallowed ground would be unavailable for nest sites for ground nesting birds.

Short cover for feeding and loafing would be provided for geese and cranes; they could detect approaching predators at a safe distance.

Young shoots would be available for grazing geese.

Production of waterfowl and cranes would be increased because of

fidelity to the area due to the available food resources and reduced predation. Also, metabolic energy consumption would be less because birds would be disturbed less which helps ensure better body condition for the nesting/breeding season both on the Refuge and on breeding grounds further north. The cereal grains also provide the high energy food needed for the southward migration and to ensure good body condition on the wintering areas.

Chemical herbicides and fertilizers would be used. There is always the concern that herbicides would drift onto non-target species and that herbicides and fertilizers from refuge operations would contaminate surface and ground water.

Quality of refuge crops would be maximized.

Occurrence of noxious weeds would be less.

4. What are the principal socioeconomic effects associated with implementation of this alternative?

Wildlife viewing and photography opportunities of waterfowl and other wildlife, such as mule deer and white-tailed deer would increase. Economic losses to local farmers and ranchers due to wildlife feeding on surrounding private croplands would decrease. This is a way of ensuring customer satisfaction to a broader range of refuge visitors and neighbors.

5. Would implementation of this alternative likely result in significant controversy? Explain.

No

D. Summarize alternatives and their effects by issue in a matrix format.

ALTERNATIVES MATRIX

Decision-Making Criteria	Alternatives		
	Alternative A (No Action)	Alternative B (Biological Farming)	Alternative C (Proposed Crop- land Manage.)
Extent to which problems, needs or opportunities would be satisfied	Needs are not met.	Needs are mostly met.	Needs are met.
Principal environmental (Biophysical effects)	Increased nest- ing cover but decreased water-fowl & crane production; no secure areas for goose & crane foraging & loafing; no chemicals used.	Same as C but no chemicals used; noxious weeds increased; reduced crop yields.	Secure areas for waterfowl & crane foraging & loafing; re- duced nesting cover; in- creased water- fowl & crane production; chemicals would be used; noxious weeds reduced.
Principal Socio- economic effects	Decreased wild- life viewing; increased crop depredation on private land; lesser local support for refuge.	Same as C but noxious weeds increased.	Increased wild- life viewing; reduced dep- redations; crop quality max- imized; noxious weeds reduced.
Degree of Public Controversy	Moderate - some objection to increased depredations	Moderate - some objection to noxious weeds.	Low - some objection to chemical use.

Section III: AFFECTED ENVIRONMENT

Camas National Wildlife Refuge is located in Jefferson County, Idaho, about 35 miles north of Idaho Falls. Camas National Wildlife Refuge is 1 of 4 refuges in the Southeast Idaho Refuge Complex, administered from Pocatello, Idaho. The Refuge is about 4800 ft elevation. The northern portion of the Snake River Plain where the Refuge is located is partially surrounded by mountains. The Centennial and Beaverhead Ranges to the north, the Lemhi and Lost River Ranges to the west. Water for the Refuge comes from Camas Creek which flows from the Centennial Mountains and from wells. The Refuge is underlain by the northern portion of the Snake River Aquifer. The Aquifer is under heavy demand for irrigation water.

Camas National Wildlife Refuge contains 10,578 acres of land. Of these about 3,600 acres are sandy upland sites, 3,000 acres are wet meadow, 900 acres are saline wet meadow, and 3,200 acres are marsh. Potential areas that could be hayed are the wet meadow habitat types. Actual acreage that could be hayed is much lower, because some of these habitat types are too wet or too brushy to hay, or are on islands. About 70 acres are planted to grain and 70 acres to alfalfa for feeding areas for geese and cranes. The alfalfa field is also hayed.

The climate is dry (< 9 inches of precipitation per year; 25% of which falls in May and June). with mild summers (temperature rarely > 90° F) and cold winters (temperatures often reaching -40° F).

Bald eagles are present from fall through spring. Peregrines nest on a hack tower on the west side of the Refuge. Ducks, Canada geese, and cranes are the major species for which management occurs. One pair of trumpeter swans nests on the Refuge. There are 2 colonial bird nest areas at Camas National Wildlife Refuge, at Ray's Lake and at Center Pond. These contain white-faced ibis, western grebe, black tern, Forster's tern, great blue heron, snowy egret, great egret, cattle egret, Franklin's gull, and black-crowned night-heron. Long-billed curlews nest in the upland areas. Mule deer, white-tailed deer, moose, and pronghorn occur on the Refuge.

No special designation lands (wilderness areas, National Historic Landmarks, critical habitat, etc.) occur on Camas National Wildlife Refuge.

Mud Lake and Market Lake Wildlife Management Areas, both managed by the Idaho Department of Fish and Game, occur nearby. Lands surrounding Camas National Wildlife Refuge are primarily agricultural lands (potatoes, alfalfa, and small grains) with BLM rangeland west of the refuge. Noxious weeds, especially Russian knapweed and Canada thistle, are major problems in the area; leafy spurge is also becoming more of a problem.

The cropland is located from 1/4 to 1/2 mile southeast of the refuge headquarters and the 120 acres was being farmed at the time the land was acquired from private owners in 1965. The ground has been farmed continuously since 1965 by refuge personnel with grain and alfalfa rotations.

Section IV: ENVIRONMENTAL CONSEQUENCES

Alternative A:

This alternative would result in the maximum amount of residual cover for ground-nesting waterfowl. However, none of the benefits to cranes and waterfowl discussed under Alternative C would occur. Goose and crane production would decrease; depredations on surrounding private land would increase and exposure to human-caused threats would increase.

There would be no drift of herbicides onto non-target species and no herbicides and fertilizers from refuge operations would contaminate surface and ground water.

Alternative B:

Under this alternative, the benefits discussed under Alternative C would occur. However, the occurrence of noxious weeds would increase and the quality of refuge crops would decline which would lead to less use by cranes and waterfowl. This would increase exposure to human-caused threats to cranes and geese off the refuge.

There would be no drift of herbicides onto non-target species and no herbicides and fertilizers from refuge operations would contaminate surface and ground water.

Alternative C:

This alternative and Alternative B would have the most beneficial effects. Cranes and geese would have feeding and loafing areas with short cover where they can detect predators at a safe distance. Young shoots of alfalfa would provide high protein feed preferred by Canada geese. The cereal grain would provide high energy food needed for migration and to ensure good body condition on breeding and wintering grounds.

Ground-nesting waterfowl prefer tall, dense cover for nest concealment. Many species initiate nesting before very much growth of new plants is present for nesting so must rely on residual growth from the previous season. Cut alfalfa fields provide very little residual growth but later nesting species may seek out the new growth for nesting. These later nesters quite often will have their nests destroyed by haying of the alfalfa. There is no way to mitigate for this loss; however, by ensuring that undisturbed upland grass cover is available nearby for nesting, this provides alternative sites for nesting birds to select in place of the alfalfa.

The alfalfa and grain fields would encourage cranes and geese to spend more time

on the refuge during late spring, late summer and early fall. This would reduce exposure to human-caused threats to cranes and geese off the refuge.

Herbicide use reduces weed competition in the grain field. Weed competition reduces crop yield and makes grain fields less attractive to waterfowl because the thick cover inhibits available food, movement, and visibility. Fallowing of the ground eliminates the need for herbicides to control weed species such as wild oats.

Improper use of herbicides can lead to chemical drift onto non-target plant species or the contamination of surface and/or ground water. These potential problems can be avoided by strict adherence to label instructions concerning rates of application and frequency, specific wind speed and direction constraints, and the use of general-use herbicides with the fewest known secondary hazards.

Section V: COMPLIANCE, CONSULTATION AND COORDINATION WITH OTHERS

List below parties contacted during the planning process. Summarize results of consultation or coordination with these parties. If the EA was circulated for public comment, also provide a summary of any significant issues raised and how they were resolved.

List pertinent laws, executive orders and regulations, and state how these have been complied with.

- 1) Executive Order establishing Camas National Wildlife Refuge:

Purposes for which Refuge was established were given primary consideration.
- 2) National Wildlife Refuge System Administration Act of 1966:

Use was determined to be compatible with Refuge purposes.
- 3) National Environmental Protection Act:


EA was prepared.
- 4) Endangered Species Act:

Effect of action on endangered bald eagle and peregrine was considered.

Section VI: CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis contained in this document, I find that implementation of the proposed action:

- ☒ Is compatible with the major purposes for which the area was established.
- ☐ Is not compatible with the major purposes for which the area was established.
- ☐ Would constitute an action significantly affecting the quality of the human environment and, therefore, recommend an EIS be prepared. (Forward EA to RO for review.)
- ☒ Would not constitute an action significantly affecting the quality of the human environment and therefore, recommend a Finding of No Significant Impact (FONSI) be prepared. (Associate Manager signs FONSI on next page)



Project Leader Date

Associate Manager Date

NOTE: If it is uncertain whether an EIS or FONSI should be prepared, the Associate Manager may forward the EA to the AFWE-ES for review. Additionally, the RD will retain NEPA sign off authority on those actions involving major planning efforts; those actions with potential regional or national policy implications for FWS; those actions involving major controversial issues of regional or national significance; and those actions involving land acquisition of any form.

APPENDIX F

ENVIRONMENTAL ASSESSMENT

CROPLAND MANAGEMENT
(Descriptive Title for Proposed Action)

Camas National Wildlife Refuge
(FWS Unit Proposing Action)

National Wildlife Refuge System Administration Act
(Legal Mandate under which Action Will be Carried Out)

Camas National Wildlife Refuge, Hamer, Idaho
(Location of Action)

Ronald L. Deutscher
(Author of Document)

June 6, 1995
(Date Prepared)

FINDING OF NO SIGNIFICANT IMPACT

CROPLAND MANAGEMENT

(Title of Project)

Camas National Wildlife Refuge, Hamer, Idaho

(Name and Address of FWS Facility)

The U.S. Fish and Wildlife Service proposes to

farm 120 acres annually at Camas National Wildlife Refuge (NWR). Forty acres would be in alfalfa hay, 40 acres would be in grain, and 40 acres would be fallowed.

FWS has analyzed a number of alternatives to the proposal, including the following:
(List)

- A. No Action - Discontinue all farming.
- B. Biological Farming - Farm current acreage using only biological farming techniques.
- C. Proposed Cropland Management Plan (Current Program) - Farm using conventional and biological farming techniques.

The proposal was selected over the other alternatives because:

Alternative C was selected because it satisfies the needs and opportunities identified to meet the objectives of Camas NWR for duck, goose, and crane production and maintenance; wildlife observation; and wildlife photography; and the U. S. Fish and Wildlife Service goals to perpetuate the migratory bird resource; and to provide refuge visitors with high quality, safe, wholesome, and enjoyable recreational experiences oriented to wildlife.

Implementation of the preferred alternative would be expected to result in the following environmental and socioeconomic effect: (List)

- 1. One hundred and twenty acres of farmed and fallowed ground would be unavailable for nest sites for ground nesting birds.

2. Short cover for feeding and loafing would be provided for geese and cranes; they could detect approaching predators at a safe distance.
3. Young shoots would be available for grazing geese.
4. Production of waterfowl and cranes would be increased because of fidelity to the area due to the available food resources and reduced predation. Also, metabolic energy consumption would be less because birds would be disturbed less which helps ensure better body condition for the nesting/breeding season both on the Refuge and on breeding grounds further north. The cereal grains also provide the high energy food needed for the southward migration and to ensure good body condition on the wintering areas.
5. Chemical herbicides and fertilizers would be used. There is always the concern that herbicides would drift onto non-target species and that herbicides and fertilizers from refuge operations would contaminate surface and ground water.
6. Quality of refuge crops would be maximized.
7. Occurrence of noxious weeds would be less.
8. Wildlife viewing and photography opportunities of waterfowl and other wildlife, such as mule deer and white-tailed deer would increase. Economic losses to local farmers and ranchers due to wildlife feeding on surrounding private croplands would decrease. This is a way of ensuring customer satisfaction to a broader range of refuge visitors and neighbors.

Measures to mitigate and/or minimize adverse effects have been incorporated into the proposal. These measures include: (List)

1. Only the minimum acreage needed to meet refuge objectives will be farmed. All farming (except alfalfa harvesting) will be done by refuge staff so that no extra acreage would have to be farmed to provide a crop share to a cooperator.
2. Mechanical fallowing will reduce the need for herbicides.
3. The least hazardous herbicides will be used. They will only be used when wind speed is less than 5 MPH to avoid drift and will not be sprayed in wetlands unless the herbicide is labeled for such use. The use of herbicides will follow label instructions to prevent and avoid

hazards to humans - either through direct contact or by buildup in soil or water.

The proposal is not expected to have any significant effects on the human environment because:

Although the ground has been farmed for several decades, the ground can be replanted to grass and forb cover. Whether the ground is replanted now or in the future, it is unlikely to ever be restored to conditions that existed prior to its being farmed. Concerns about herbicide use are discussed in the mitigation section above.

The proposal has been thoroughly coordinated with all interested and/or affected parties. Parties contacted include: (List)

Therefore, it is my determination that the proposal does not constitute a major Federal action significantly affecting the quality of the human environment. As such, an environmental impact statement is not required. An environmental assessment has been prepared in support of this finding and is available upon request to the FWS facility identified above.

Reference: (List title of EA)

Cropland Management at Camas National Wildlife Refuge

Regional Director

Date